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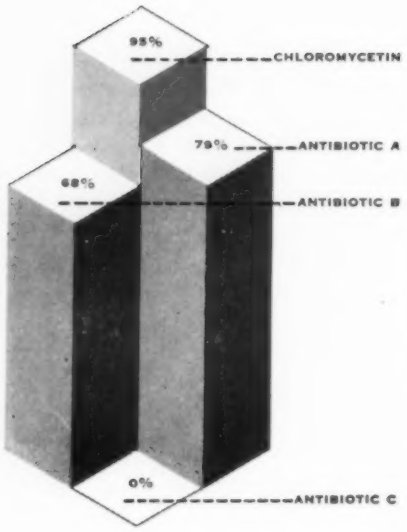

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for today's problem pathogens

Resistant microorganisms frequently cause poor, delayed, or no response to antibiotic therapy. Because *in vitro* sensitivity tests are valuable guides in determining the antibiotic most likely to produce optimal clinical response, it is important that such tests be employed whenever possible. Recent clinical and laboratory studies[1-12] show that CHLOROMYCETIN (chloramphenicol, Parke-Davis) is effective against more strains of microorganisms than other commonly used antibiotics.

CHLOROMYCETIN is a potent therapeutic agent and, because certain blood dyscrasias have been associated with its administration, it should not be used indiscriminately or for minor infections. Furthermore, as with certain oth drugs, adequate blood studies should be made when t patient requires prolonged or intermittent therapy.

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*This graph is adapted from Altemeier, Culbertson, Sherman, Cole, Elstun, & Fultz.[1] It represents the second and concluding part of data presented in a previous issue.

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MEDICAMENTA VERA

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Editorials

Polio Vaccine Again

Desiring to bring the profession up to date on the present status of vaccine, Dr. R. Q. Goodwin, President of the Oklahoma State Medical Association called together Dr. Grady Mathews, Commissioner of Health, and his advisors and the State Committee on poliomyelitis vaccination. Out of this meeting certain facts became clear:

1. The vaccine is short.
2. The N.F.I.P. is out of the vaccine business.
3. Of the six firms licensed to make vaccine, only three have had any on the market since May, 1955, and only one in any great quantity.
4. The method of release for use is as follows: When a lot has been approved by the manufacturer and the N.I.H. (National Institute of Health)the U.S.P.H. is notified that a certain amount of vaccine is ready for use. The U.S.P.H. in turn notifies the state health departments that a certain amount of vaccine is available to them and asks what they want to do with it. Oklahoma's share of each lot released is 1.384 per cent. The State Health Department then tells the U.S.P.H. how much of the allotment is wanted for its own use and how much may be released through commercial channels in Oklahoma.
5. At the present time Oklahoma's health department is taking 40 per cent and releasing 60 per cent for distribution to private physicians.
6. This 40 per cent goes to 30 county health units mostly in the southern and southeastern part of the state where it is given to children whose parents request it from age three months through the eighth grade in school. As the vaccine becomes available, other county health units will be supplied.
7. Congress has appropriated enough funds for the health department to continue this program.
8. Since the vaccine is short and since one injection is 50 to 60 per cent effective, the Commissioner of Health recommends that an effort be made to give all children one injection and after this continue with the second and third when more vaccine is available. The lapse of more than the specified time does not interfere with the immunizing effect of subsequent injections.
9. An effort will be made to get the commercial companies to be fair as possible in their distribution to physicians but there is little hope that all problems can be solved until the vaccine is plentiful.

This is the situation as it exists. We hope that before too long the government's efforts can be limited to those people who cannot, or will not, arrange for their own immunizations.

Fifty Million People in Blue Cross

Today the Blue Cross Plans over the country proudly announce that they are covering one-third of the population of the United States with a Blue Cross contract. This is indeed a feather in the cap of the medical profession, the hospitals, personnel of the plans and the business men who have been interested in the problem of hospitalization for their people. The quite obvious desire of the American people generally to be protected against sudden crippling expense of hospitalization and their equally obvious desire to be able to pay their own way should not be considered lightly.

Great success means also great responsibility. There is one big question that deserves an answer. In the minds of people so protected particularly when industry pays the charge, does it make a real difference who is Uncle, Blue Cross. the insurance companies or Sam? Complete coverage for medical care and hospital care is not sound. The will to get well and to stay well must not be softened by the ease of going to bed and being waited on. The right to determine for

himself the what's, the where's, the why's and the who's must not be destroyed by ready accessibility of hospital beds and eager hands without cost. Competition for contracts with industry and with labor unions is more a matter of the amount and number of services offered than cost. The individual and his real needs, not wants, must not be lost sight of.

It would seem that the real answer is a system in which the stinger of financial catastrophy is removed, but the little pain of some payment remains—enough pain to make the experience undesirable, to be avoided if feasible, and to be terminated as soon as possible.

Standard Deviation

The one calculation the statistician, or the clinical reader watches for (and if this is not given, an eyebrow changes position) is the *Standard Deviation*, expressed by the Greek letter, sigma (Σ). This is the measure of the scatter of the observations around the mean. It represents the variation of an individual observation and can be either plus or minus from the mean.

The amount which each observation varies from the mean is obtained and is called—the deviation from the mean. This is either a plus or a minus figure also. It is much easier to work with two like figures such as two positive numbers; rather than a positive and negative. To accomplish this and make for more accuracy, these figures are squared (deviation from mean x deviation from mean). These squared deviations are all added and the sum is divided by the number of observations. The standard deviation is finally obtained by extracting the square root of this figure (for having squared the original deviation, the reverse step of extracting the square root must finally be made).

A large standard deviation denotes a wide frequency distribution around the mean and usually a smaller range. (The range is the difference between highest and lowest observation.) This is used in the normal frequency distribution curve discussed in December and January issues. One times the Standard Deviation from the mean (either above or below) will include two-thirds of all cases observed and two times the Standard Deviation from the mean (either above or below) will include 95 per cent of all cases observed, if this work exhibited a normal frequency distribution. For example, if 100 women gained an average (mean) of 20 pounds each during their pregnancy and the standard deviation is four pounds; two-thirds, or 66 of them gained between 16 and 24 pounds, or one standard deviation on each side of the mean. Ninety-five gained between 12 and 28 pounds or two standard deviations on each side of the mean. Then two and one-half per cent gained less than 12 pounds and two and one-half per cent gained more than 28 pounds. The latter cases are the important ones to analyze as to the reasons for their variance from the so-called normal cases.

Standard deviation calculations are utilized still another way: To substantiate the probability of two series of cases being significantly different or was the apparent difference of such an extent that this could have occurred by chance alone rather than as the result of better treatment, care, etc.?

As an example, one hospital had 5,591 deliveries of which 476 were classified as prematures. To obtain their premature rate 476 is divided by 5,591 x 100 equalling 8.5 per cent. The standard deviation would be calculated thus: 8.5 ÷ 5,591 = .00152 x 100 = .152 per cent. The square root of .152 per cent is approximately .4 per cent which is the standard deviation and would be reported as 8.5 + .4 per cent. Thus at this hospital their premature rate could vary from 8.9 per cent to 8.1 per cent and this change could be due to chance alone, since this deviation is based on the chance probability.

Then another hospital had 16,764 babies of which 1,318 were premature. Their rate would be 7.9 per cent. Immediately the unsuspecting reader says, "Oh, oh, this hospital has a lower premature incidence. I guess what they do is better." But, by calculating the standard deviation (7.9 ÷ 16,764 =) .0047 x 100 = $\sqrt{.047}$ = .2 per cent) for this hospital. With this answer we became a little dubious of the good results. To be more nearly sure, one further step is necessary to see if this difference is significant.

(Continued on Page 86)

Letters to the Editor

TO THE EDITOR:

I have read with interest Dr. Marvin Elkins' article on spinal anesthesia in obstetrical deliveries in the December, 1955, issue of the *Journal*. It seems that some comments are in order concerning the method of spinal anesthesia reported. In these remarks I shall speak only as an anesthesiologist, and shall in no way attempt to evaluate the procedures from the obstetrical viewpoint.

I can decide on no better method of discussing Dr. Elkins' article than to take up the points he has listed in his "Discussion" and offer remarks concerning them.

1. "Many large centers require that a physician be in constant attendance following administration of spinal anesthesia."

This requirement is obviously ideally desirable; but, I must agree with Doctor Elkins that such a requirement is impractical in a general practice where physicians are at a premium, and where often the obstetrician must administer his own spinal anesthesia or deny the patient the benefits of the method. If a physician trained in anesthesia is available, it would seem a needless hazard for the obstetrician to undertake the practice of two branches of medicine at one time, thus dividing his attentions.

2. "Most physicians have stated a high incidence of anesthetic failure."

This "high incidence" has not been our experience even in administration of spinal anesthesia when dilatation is complete and the head is on the perineum. Lack of cooperation on the part of the patient at this stage has been thought to be due to improper sedation, coupled with a lack of explanation in advance as to what will be necessary in giving of the anesthesia. We have used spinal anesthesia in the first stage of labor with the more conventional techniques and had good results. However, we prefer to wait until dilatation is complete, in the primipara, or until termination of labor is imminent in the multipara.

3. "Many have objected because of anesthesia of too short duration and/or inadequate control of pain."

This objection would undoubtedly be overcome by the tremendous doses of pontocaine Doctor Elkins uses, but this is at the sacrifice of safety. Anesthesiologists are in agreement that 20 milligrams of pontocaine intra-thecally is a gross overdosage for low spinal anesthesia. Doctor Elkins has been indeed fortunate to have given this dose in many cases and had no reportable serious complications. Doubtless the one point in technique which has prevented serious trouble to this time has been the use of a hyperbaric solution and the marked degree of head-up position (ten degrees). The use of this position, however, with large dose spinal anesthesia may lead to marked hypotension and cerebral anemia, since sympathetic paralysis is always significantly higher than somatic anesthesia. An incidence of eight per cent of use of vasopressor drugs is unusually high in our experience with conventional saddle block anesthesia. I would predict that more patients would develop significant hypotension in a larger series. Duration of conventional saddle block anesthesia can be prolonged by the addition of adrenalin (as little as 0.1 milligram) to the mixture injected. We have had quite adequate control of pain with doses of five to six milligrams of pontocaine mixed with an equal volume of 10 per cent dextrose. I have repeated this when the duration of the original dose was inadequate for the full delivery time, and I would not hesitate to repeat it again if necessary.

4. ". . . time in attendance . . ."

We are in complete agreement with Doctor Elkins that spinal anesthesia does not demand excessive amounts of time from the obstetrician. (In making this remark I perhaps deviate from my avowed purpose of offering no remarks from the obstetrical viewpoint. Once again, it is the opinion of an anesthesiologist only.)

5. It is felt that even though Doctor Elkins reports no cases of spinal anesthesia slowing down labor significantly, the high dose used will sooner or later give too high a level of anesthesia and labor will be slowed

or stopped. Smaller doses carry a much greater margin of safety in this respect.

6. "Many think that there is too high an incidence of so-called 'spinal headache'."

There is widespread agreement wth Doctor Elkins that small gauge needles reduce the incidence of this troublesome though not serious complication to a minimum. I unfortunately have no personal statistics, but after talking with my anesthesia colleagues and some obstetricians who request spinal anesthesia, I believe the incidence with our technique which employs a 22 gauge needle is in the neighborhood of 10 per cent. This is not felt by either anesthesiologists or obstericians to be high enough to warrant using other forms of anesthesia. I congratulate Doctor Elkins on his absence of headaches with the 24 gauge needle. The only objection to the small gauge needle is the increased chance of breakage during the lumbar puncture.

7. We have not seen central nervous system complications following conventional saddle block anesthesia for obstetrics. I do feel, however, that one increases the risk of such complications by the use of very high doses of anesthetic drugs.

In summary, it is the opinion of the writer that spinal anesthesia is definitely the anesthesia of choice for vaginal delivery (and for Cesarean section as well) since it offers so many advantages to the mother and infant. However, it is also felt that such anesthesia should be carried out with conventional doses of drugs. The dangers of spinal anesthesia are greatly increased by overdosage. I believe that if doses of 20 milligrams of pontocaine are used widely that maternal mortality may result from slips in technique and that spinal anesthesia will be thrown into disrepute. We must therefore recommend that Doctor Elkins' technique not be employed, but that the usual saddle block techniques with small doses be used instead.

The above comments were written in consultation with, and on the suggestion of, the anesthesiologists of Oklahoma City.

Sincerely yours,

s/R. GIBSON PARRISH, M.D.
President, Oklahoma Society
of Anesthesiologists

TO THE EDITOR:

There are several points in Doctor Elkins' recent article[1] concerning saddle block anesthesia in obstetrics which deserve criticism.

His recommended dosages (20 mgs. of pontocaine) is considerably excessive and therefore dangerous. Five mgs. of pontocaine in two ccs. of 10 per cent dextrose solution is ample for saddle block anesthesia. Larger doses may produce levels of anesthesia much higher than needed, which in turn impedes or may arrest labor and also is more apt to cause maternal hypotension. Both of these complications may be detrimental to the fetus.

Injection of the drug during uterine contraction is dangerous because higher levels than desired may result. This is undesirable for reasons listed above. Levels no higher than the 10th thoracic dermatome are satisfactory for all types of vaginal delivery with the exception of interuterine manipulations such as version and extraction where saddle block is contraindicated.

The blood pressure of the patient should be watched carefully (by checking every five minutes) throughout the duration of the anesthesia. If hypotension occurs, it should be treated by intramuscular ephedrine 30 to 50 mgs. or neosynephrine three to five mgs. Oxygen inhalations should also be given until the blood pressure reaches a normal level. The patient's feet should also be elevated. Uncorrected hypotension is potentially harmful to the mother and especially to the fetus. Pressor drugs and a means of administering oxygen and artificial respiration should always be immediately available where spinal anesthesia is being administered.

This is a safe and effective method of providing obstetrical analgesia, preferably as a semi-terminal or terminal method, when properly performed with meticulous attention to precautions and details. Carelessness in its application make it dangerous and would therefore injure the reputation of a good method as well as harming your patients.

Very sincerely,
s/HOWARD A. BENNETT, M.D.
2010 S. Utica Tulsa, Oklahoma

1. Elkins, Marvin. Spinal Anesthesia in More than 500 Vaginal Deliveries. J.O.S.M.A. 48:13:413-416 (December) 1955.

Scientific Articles

Hemolytic Anemia and Hepatitis From METHYL ALCOHOL POISONING, *Report of a Case*

JOHN M. GOWDY, M.D.

THE AUTHOR

John M. Gowdy, M.D. was practicing in Tahlequah as Medical Director of the William W. Hastings Hospital at the time his article was written. He is now with the Veterans Administration Hospital, McKinney, Texas.

While it is very convenient to consider various organ systems as independent and separate entities for the purpose of diagnosis and treatment, a number of conditions unfortunately cannot be forced into the conventional organ system pattern. The connection between the spleen and diseases of the blood has been recognized for many years, but only recently has evidence begun to accumulate that the liver may also be involved in such diseases, specifically, the hemolytic syndromes.[1]

In the case presented here, both hemolytic anemia and hepatitis occurred as a result of a specific toxic agent, methyl alcohol. While hepatitis is commonly observed in methyl alcohol poisoning, there are no reports of hemolytic anemia caused by this agent. Finally, the combination of hepatocellular and hemolytic jaundice produces an extreme concentration of biliary pigments in the blood, which is noteworthy as a medical curiosity.

Report of a Case

D.M., a 62-year-old, three-quarter Creek Indian, was admitted to the hospital on Dec. 18, 1953 with the complaint of nausea and vomiting and severe abdominal pain of one week's duration. While occupied at his usual work of house painting a week before admission, the patient said, he had nausea and vomiting and colicky abdominal pain localized in the epigastric region. Intermittent fever had been present. This condition had remained essentially unchanged until the day of admission. Then he consulted a physician who performed a urinalysis, told him he had hematuria, and advised immediate hospitalization.

From the W. W. Hastings Hospital (U. S. Public Health Service). The views expressed in this paper are the views of the author and do not necessarily represent those of the Public Health Service.

The patient denied any blood dyscrasia, biliary disease or previous attacks of a similar nature. He had been hospitalized at the age of 48 for fracture of the fibula. This lesion healed normally. Wassermann was negative at that time. He was treated for influenza in 1952, when the hemoglobin was 69 per cent and RBC 3,900,000, and later in 1952, for chest pain which could have been angina. At this time the hemoglobin was 70 per cent and RBC 4,000,000. Chest roentgenogram during this admission was essentially negative.

Familial history of blood dyscrasia was absent.

Physical examination revealed an acutely ill white man, severely jaundiced and in considerable pain. Temperature was 103, pulse 128, respiration 28 and blood pressure 130/80. The patient was toxic and had difficulty in recalling and expressing the events of his illness. His abdomen was distended, and epigastric tenderness and muscle guarding were present. The remainder of the examination was essentially negative.

Laboratory findings were as follows: WBC 17,200; RBC 2,670,000; Hb. 7.5 gm.; 82 neutrophiles; 16 lymphocytes; one monocyte; one basophile; a few neucleated RBC noted; urine positive for bile, 1+ albumin, few heavy granular casts; icterus index 259, direct positive Van Den Bergh 12 mg.

The patient was started on penicillin, 300,000 units once daily. Since he was unable to tolerate food by mouth, he was given

2,000 cc. 10 percent glucose in normal saline daily. Abdominal pain and distention worsened, and it was necessary to institute continuous gastric drainage through a Wangensteen suction and stomach tube.

After three days the patient's condition was essentially unimproved, and penicillin was discontinued. The leukocyte count had risen to 20,950 with four per cent neucleated RBC. Despite the evidence of hemolysis, the patient's condition was very suggestive of a surgical abdomen. 500 cc. whole blood was given. The patient continued to be disoriented at times, and abdominal pain and distention continued.

On his fourth day in the hospital the patient suffered a severe nasal hemorrhage precipitated by the nasal suction tube, which was removed. After the tube was removed, the patient had several episodes of emesis of coffee ground material. The gastric tube was reinserted with some relief. On his fifth day in the hospital, severe hiccup developed. Because of the possibility of toxic hemolysis with secondary liver involvement, cortisone was begun. Within 24 hours the patient became and remained afebrile but continued to hiccup. Slow clinical improvement was manifested, and the suction was removed on the eighth day. Thereafter the patient rapidly improved and was discharged on the 19th day.

Attempts to discover any surgical lesion of the biliary passages were negative. A gallbladder series showed no dye absorption, but the cephalin flocculation was 1+ and 2+ at this time. Fragility test showed slightly decreased fragility over normal controls (partial hemolysis at 0.22 dilution). The results were unchanged by refrigeration. Test for sickle cells was performed on two occasions on the patient and once on his sister. Results were 15 per cent abnormal forms in 24 hours on the first occasion and negative on the second instance and in the sister.

During the period of recovery, the patient admitted that he had drunk a quantity of methyl alcohol just before the onset of his illness.

The patient was rehospitalized on Feb. 1, 1954 for persistent hepatitis. Gallbladder series and gastrointestinal series at this time were negative. Cephalin flocculation was 2+ and 2+; RBC 4,000,000; Hb. 90 per cent. Coombs' test and attempts to elicit sickling phenomenon were negative.

Comment

In the symptomatology of this case, there appear to be two definite and distinct syndromes. One is the acute hepatitis produced by alcohol, commonly by methyl but occasionally by ethyl. This patient had a history of rather steady if unspectacular consumption of alcohol. Ample evidence of chronic liver damage from such a practice exists. Phillips and Davidson have recently published a review of acute liver failure superimposed on chronic cirrhosis influenced by alcoholism.[1] I must say influenced, since the exact relationship between chronic alcoholism and liver disease is not definitely known. Opinion remains divided between a secondary relationship due to nutritional deficiencies which develop in the alcoholic and a more direct toxic effect on the liver cells.

In the initial clinical aspects, this case was typical of those in the series reported by Phillips and Davidson. There is an intense jaundice, leukocytosis, a tendency to hemorrhage and coma. All patients with this syndrome who had an icterus index of more than 200 died. A considerable proportion of the elevated icterus index in this case was due to hemolysis rather than to liver damage. In recent literature these two lesions have been linked.

Jones and associates have recently published a study of red cell survival in liver disease which shows that there is an increased tendency toward hemolysis in all forms of hepatic impairment.[2] They point out that while anemia accompanying liver disease is quite common, definite hemolytic syndromes are relatively rare.

To prove this a case of hemolytic anemia and hepatitis one must rule out sickle cell anemia. In this tribe of Indians there is a varying admixture of colored blood, dating back to the days when they traded in slaves, before the migration to Oklahoma. Repeated tests on both the patient and members of his family failed to reveal any evidence of the sickle cell trait. Certainly the patient could hardly have reached the age of 60 without some attacks. Since sickle cell crisis

is a disease of childhood, attacks usually begin before the age of 12. The age of the patient is, in itself, enough to rule out any of the congenital hemolytic syndromes.

The question of a surgical lesion is somewhat harder to resolve. A syndrome, consisting mainly of fever and associated general malaise for two-three days following operation, is often seen following cholecystectomy. Various explanations are given for this reaction. Some authors ascribe it to cholangitis, while others consider it a peritoneal reaction from bile contamination, bile leakage or both, during and after operation. I lean to this view and have treated four cases postoperatively with cortisone in small doses with excellent response in all. In view of these results, it is theoretically possible that this patient had a ruptured gallbladder which the natural process of healing was able to control with the aid of cortisone. The normal gallbladder films after recovery are sufficient to refute this view, in my opinion.

Let us attempt to retrace the sequence of events in this case. First there was a direct toxic insult to the liver cells, which may have been already weakened by the direct or indirect effects of chronic consumption of alcohol. According to Jones and associates,[2] damage to the liver cells leads to portal obstruction and hypersplenism and thus to increased hemolysis. According to other authors it is possible that alterations in the liver cells may cause alterations in the protein fraction of the plasma, resulting in its functioning as an autohemolytic factor.[3]

It has further been suggested that a virus, specifically Newcastle disease, is responsible for the actual hemolysis in some patients and that the substance detected in the various immunologic reactions is an antivirus.[4] It is also possible that alterations in metabolism mediated or influenced by the liver could actually alter the osmotic properties of the plasma, or, more probably, affect the cell membrane of the red cell to make it more susceptible to damage. In this particular case, there is no reason to implicate the spleen in the hemolytic process, although it is universally considered to play a role in all such cases. The acute pain in the right upper quadrant was most probably due to direct pain from swelling of the liver, and possibly by disturbances in the pylorus of the stomach caused by excessive demands for the intrinsic factor by the hemopoietic system in its efforts to compensate for the increased destruction of red cells.

Hemorrhagic tendencies are related to both liver disease and hemolytic phenomena.[5] The abnormal bleeding seen in this case probably reflects changes in clotting power induced by acute hepatitis, although there is no particular reason why a substance which affects the red cells might not also affect the lining cells of the capillaries.

Coma, related to the hypercholemia, is common in hepatic failure. Nausea and vomiting reflect general toxicity. Leukocytosis is secondary to a generalized hyperplasia of the bone marrow in an effort to compensate for increased red cell loss.

It is most fortunate that therapeutic agents are effective without our understanding the exact mechanism of their action. There are numerous reports of the efficacy of cortisone in both hepatitis and hemolytic anemia.[6] The mechanism of action varies according to one's interpretation of the underlying process. Cortisone or corticotrophins are generally believed to exert a direct effect on the body cells, making them more resistant to various toxins. Thus, their effect would be on the red blood cells to make them more resistant to hemolytic forces, whether osmotic, electrical, immunologic or direct trauma.

Summary

A case of hepatitis associated with acute hemolytic anemia from methyl alcohol poisoning is reported. This condition responded well to the administration of cortisone and blood transfusion.

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The Surgical Treatment of
CORONARY ARTERY INSUFFICIENCY

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Coronary thrombosis kills at least 200,000 persons yearly in the United States and cripples unknown thousands.[1] This figure has increased steadily with the increase in population and life expectancy. The incidence of death from this cause is one-third higher in professional men, including doctors, than in the general population. We physicians should have a personal interest in curbing this disease.

Results following treatment of the acute myocardial infarction are improving. Yet 45 per cent of patients with myocardial infarction are dead in five years, and the average life expectancy is estimated at seven or eight years. Only 15 to 20 per cent die following the first attack, but nearly every patient eventually dies of coronary artery insufficiency or myocardial infarction. It is not enough that we physicians help these patients survive the first attack; we must also do all we can to help them live a longer, more active life with their disease.

The general methods of treating this condition have not changed greatly in the last few years. Many authorities believe that the use of anticoagulants has decreased the death rate immediately following a myocardial infarction.[1, 2, 3] They think that the use of anticoagulants has definitely decreased the incidence of thromboembolic complications. I^{131} is useful for rendering these patients hypothyroid and thereby decrease the oxygen need of the myocardium. It has a very definite place in the treatment of heart disease.[4, 5, 6] Surgical operations by increasing the total blood supply to the heart and by establishing greater intercoronary arterial anastomosis, on the other hand, also offers a great deal to these patients.[7, 8, 9, 10, 11, 12, 13]

Thus, anticoagulants may guard against subsequent thrombosis but will not increase the blood supply to the heart. I^{131} will decrease the need for oxygen but will not increase the blood supply to the myocardium or protect against subsequent infarction. Only a surgical operation will increase the blood supply to the myocardium and protect against further infarction. All three of these methods may be used together, as their actions are different and complementary.

The surgical treatment of coronary artery disease began in the experimental laboratories in 1932. It has made steady progress, until now it has reached a place of importance.[14] More than 80 per cent of these patients can be helped by a surgical operation; the mortality is about five per cent.[7, 9, 12] The work in the laboratories continues.[15, 16, 17] Many hundreds of human beings have been benefited by surgical procedures. The benefits derived from these operations are fundamentally two: First, it is possible to decrease the pain and to increase the activity of the patients. Second, the life expectancy of these patients is increased by protecting them against subsequent coronary artery occlusion through the development of intercoronary arterial anastomosis.

Types of Death

Two types of death follow a coronary artery occlusion. One will be called trigger mechanism death, and the other will be called muscle death.[7, 8] In death of the mechanism type, the patient has an occlusion of one of the smaller branches of a coronary artery. The occlusion produces a small area of ischemia or infarction. This outside focus is potentially capable of sending out impulses that in turn destroy the normal mechanism. The myocardium becomes convulsive, the heart pumps no blood, and the patient dies. In these patients, the myocardium may be

normal except for this small area of ischemia. Surgical operation can do much to help this patient.

Muscle death is caused not by a sudden occlusion but by a gradual, progressive occlusion of the coronary circulation. There is decreased blood supply to the entire myocardium. The muscle gradually dies and is replaced by fibrous connective tissue. The myocardium can no longer carry on its work. The heart dilates and fails, and the patient dies. This patient may be helped by a surgical operation. The extent of help will depend upon the condition of the myocardium at the time an operation is proposed. Obviously, these operative procedures cannot restore the destroyed myocardium.

Surgical Methods of Improving The Coronary Circulation

The coronary circulation should be considered on the basis of (1) the total inflow and (2) the distribution of the blood entering the coronary circulation.

The heart can maintain function on a small fraction of the normal total blood flow, provided the distribution of the blood is adequate. This point has been demonstrated in the experimental animal by almost totally occluding a main coronary artery by means of a ligature without causing a cardiac death. In a number of hearts, all the coronary inflow has been occluded and in many human hearts a hair-like lumen has been found in the major coronary arteries, without producing cardiac death. On the other hand, if the total inflow is adequate but the distribution is not—that is, if an area of ischemia suddenly occurs—this may cause a mechanism death.

The problem, then, is not only to increase the inflow but also, and more important, to assure an equal and adequate distribution of the blood to the myocardium. The role of the intercoronary arterial circulation comes into play in the distribution of blood. Unfortunately, as you know, most of the coronary arteries are end arteries, and there are few if any anastomotic branches between the main branches of the coronary arteries.

The methods used to improve the coronary circulation are: (1) Addition of blood from outside sources, and (2) rationing the coronary blood in short supply; that is, further developing intercoronary arterial anastomosis.

There are three methods of producing an increased blood supply. The first is producing an anastomosis from outside sources to the capillary bed of the myocardium. An example is the poudrage operation of putting talc or asbestos into the pericardial sac. The second is producing an anastomosis from outside sources to the coronary arteries themselves. The internal mammary implantation is an example. The third method is directing blood from outside sources through the venous system and thus redirecting blood in a retrograde flow. This is accomplished by the arterialization of the coronary sinus.

Rationing the coronary blood supply must be done through the intercoronary circulation—that is, by stimulating the formation of anastomotic arterial branches between the coronary arteries. It is done in three ways: (1) by ischemia, (2) by increasing the arterial pressure in the coronary system, (3) by diffuse anastomosis into the capillary bed of the myocardium. It has been shown both in experimental animals and in human beings that an ischemic myocardium will produce within itself anastomotic coronary arteries. This very fact increases the efficiency of these operative procedures in patients with actual coronary artery insufficiency. An example is an ischemic myocardium.

Increasing coronary artery pressure can be accomplished in three ways. The first is by introducing blood from the systemic circulation under pressure into the coronary circulation. Such increased coronary pressure is produced by implantation of the internal mammary artery or by arterialization of the coronary sinus. The second is by occluding the venous return, thus increasing the pressure within the coronary system. Partial or complete ligation of the coronary sinus is an example. The third is a combination of these two methods. The Beck II procedure is such an example.

Diffuse anastomosis into the capillary bed of the myocardium is produced by poudrage or, to a lesser extent, by grafting procedures.

Methods of Study

There are three methods of measuring the usefulness of a given operative procedure. One method is by the ligation of a coronary

artery and measurement of the infarcts and mortality produced; another is the backflow method, as developed by Mautz and Gregg:[18] and the last is by clinical evaluation or exercise tests.

In the first method, a selected protective operative procedure is carried out. A major coronary vessel is later occluded. If the animal dies, the size of the infarct produced is measured. If he lives, the animal is sacrificed after a given length of time, and the infarcted area is measured. Let us say, for example, that in a control group of animals, ligation of the circumflex branch of the left coronary artery causes death in 70 per cent of the animals and the infarct averages 4x2 cm. after a protective operation, the mortality following ligation is reduced to 20 per cent; infarcts, in the fatalities, are reduced to 2x1 cm. One can assume from these results that the operation is of benefit.

The backflow method is simply a measurement of the backflow from the distal end of a divided coronary artery in an experimental animal. For instance, one can obtain a base line by ligating the circumflex branch or the descending ramus of the left coronary artery, dividing it and measuring the backflow of the blood coming from the distal end of the severed artery in a normal dog. Since the coronary is an end artery and blood coming from the distal end represents flow from intercoronary anastomoses, any increase shows further formation of anastomoses. After a base line is obtained, an operative procedure is applied and the blood flow through the distal end of a severed coronary artery is measured: The increased flow represents the increase in intercoronary anastomosis.

Other clinical methods of evaluation are electrocardiograms, exercise tolerance tests and longevity of the patient following the operation. When the hearts are available after these operations, the coronary system may be injected with barium paste or Schlesinger's solution, and the anastomosis outlined by photograph or by roentgen ray.

Operative Procedures

Several types of operative procedures will be discussed. They are: (1) poudrage procedures with or without abrasion, (2) grafts, (3) sympathectomy or pericoronary neurectomy, (4) coronary sinus ligation, (5) arterial implants, and (6) arterialization of the coronary sinus.

The Beck I procedure is a combination of these methods.[9, 10] It is a poudrage procedure using asbestos and abrasion of the epicardium, partial ligation of the coronary sinus, and grafting of the parietal pericardium and mediastinal fat to the heart surface. The Beck II operation produces an anastomosis between the aorta and the coronary sinus, either directly or by means of a vein graft. This procedure is followed, at a second stage, by partial ligation of the coronary sinus.[15, 20]

The Vineberg procedure consists of implanting the internal mammary artery into the left ventricular myocardium. Together with this implantation is grafting of fat and pericardium on the surface of the heart.[21, 22] A simple poudrage operation using talc is carried out by Thompson.[23] Talc plus abrasion is used by Mazel.[24] The grafting of the small bowel to the surface of the heart through the diaphragm has been accomplished in the experimental animal.

In the sham operation, the heart was simply exposed by thoracotomy, the pericardium opened and closed, and nothing more done. This operation is simply to show the effects on the coronary circulation of such a procedure.[11] The operation of a sympathectomy or pericoronary neurectomy as proposed by Fauteaux is simply cutting the autonomic nerve supply to the coronary circulation. It has been done with and without partial coronary sinus ligation.[25]

Evaluation of Operations

The Beck I procedure is relatively simple. It has a low mortality and is of consistent benefit to the patient. Experimental animals when measured by the backflow method, showed an increase in average backflow of from 3.8 to 8.9 cubic cm. a minute, or an average increase of 5.1 cubic cm. a minute. Measured by the ligation-mortality-infarct tests, the mortality was reduced from 70 per cent in the control group to 30 per cent in the group having the Beck I procedure. The infarcts were consistently reduced.

The Beck II procedure increased the backflow from 3.8 cubic cm. a minute to 13.7 cubic cm. a minute, or an average of 10.9 cubic cm. a minute. The mortality after ligation of

the circumflex branch of the coronary artery was reduced to zero after a Beck II procedure, as compared to a 70 per cent mortality in the control group.[11, 12, 26, 27, 28, 29]

Obviously then, the effect of the Beck II procedure is greater than that of the Beck I. However, the mortality in the Beck II procedure is around 25 per cent and the morbility is much greater. This procedure, because of its greater risk and magnitude, cannot be applied to many patients because they are poor risks. Its range of application is limited. The anastomosis fails to function in a small number of people. In one human heart available for examination, the aortic anastomosis had lost contact with the capillary bed. However, the intercoronary arterial anastomosis had already been well established before contact was lost. Intimal thickening of the vein wall accounts for these occlusions. All in all, the Beck I procedure is preferred.

The simple poudrage procedure as proposed by Doctor Thompson[23, 30] has in its favor simplicity, wide application and very low risk. Backflow studies show an average increase in the experimental animal of 1 cubic cm. a minute. This rate can be increased by adding abrasion of the myocardium, ligation of the coronary sinus, or both. When these procedures are added, the backflow will increase to nearly 5 cubic cm. a minute. Clinical evidence covering a 14 year period and 57 patients shows that the patients have been definitely improved and that nearly all of their lives have been prolonged.

Implanting the internal mammary artery into the left ventricular myocardium as proposed by Vineberg is a procedure which increases the inflow of blood into the myocardium and also increases the pressure in the coronary system. One of the great disadvantages is that at best only 75 per cent of the implanted vessels remain functional. In experiments, only 50 per cent of the animals developing an anastomosis survive after ligation of the descending branch of the left coronary artery.[21, 31, 33, 33, 34] In experimentally produced coronary insufficiency, an internal mammary implantation will return the exercise tolerance to normal. Ligation of the implanted artery will then cause the death of the animal. Implantation of the internal mammary artery offers protection in direct proportion to the size and extent of the anastomosis. The obvious drawbacks to this procedure are, first, that it is technically difficult; second, that it has a higher mortality and morbidity, and, last, that it is successful in only about 40 per cent of the experimental animals.

A sham operation on the heart is one in which the heart is exposed to the trauma of an operation but no actual operation is done. Backflow studies, after four or five weeks, show an increase following these operations. This operation simply shows that trauma incidental to any operation on the heart increases the intercoronary anastomosis.[11, 12] Sympathectomy or pericoronary neurectomy produces no change in coronary backflow and apparently offers no increased protection to the patient. There is insufficient evidence to truly evaluate the operation of pericoronary neurectomy.[11, 25]

All operative procedures are more beneficial in the presence of coronary insufficiency. Myocardial ischemia stimulates intercoronary arterial anastomosis.

Operative Results

The Beck I procedure helped 84.8 per cent of the operated patients. Of this group, 36.3 per cent experienced no pain and were back to useful occupations, and 48.5 per cent were definitely better. The remaining 15.2 per cent were either not improved or were worse. As of October 1, 1954, the over-all mortality was less than four per cent in Beck's series of cases. There had been no mortality among the last 28 patients.[11, 35]

With the Beck II procedure, 88.4 per cent were improved. Of these patients, 39.6 per cent had no pain, 41.9 per cent worked with no limitations, 37.2 per cent worked with limitations, and 48.8 per cent had less pain. Only 11.6 per cent were unimproved or worse. The over-all mortality in this group was 26.1 per cent. However, the mortality in the year 1954 was somewhat reduced.[11]

A 14 year follow up study of patients receiving the operation designed by Thompson showed a mortality of slightly more than 12 per cent.[23, 30] Thirty-three patients, or 66 per cent, are now living. The youngest patient in the group is 35 years old. The oldest 68; the average age is 61. Most of the patients were

in the sixth decade. Three of the patients were in congestive failure; seven had hypertensive heart disease. The shortest length of life following the operation was two months, the longest is now more than 14 years. An average span of more than five years followed the operative procedures. However 33 of the patients are still living; therefore the life expectancy will undoubtedly increase as time goes on. The average duration of symptoms before the operation was four and one half years. The average life span after the operation was five years. Thus the span of life of these patients, from the first symptoms, was nine and one half years, definitely an increase over that of the average coronary patient not receiving the operation. It is estimated that 90 per cent of these patients were improved somewhat and that 40 per cent were greatly improved.

A similar procedure has been carried out by Mazel and associates, et al, on 53 patients in the last four years; they say that the mortality is almost nil.[24] Recent figures on the Vineberg implantation procedure show an over-all mortality of 14 per cent in 29 patients. Sixty per cent are free from pain, and 73 per cent have returned to work.[34]

Selecting Patients

All patients should be individually evaluated. The most acceptable patient for the operation is a lean person in his forties or fifties who has had the disease for a year or more, and who has pain but can still get around. He must have serious impairment of his coronary arterial flow.

No patient is accepted if he has had a known infarct within the past six months. Patients with heart failure or with progressively enlarging hearts are not acceptable for operation. A patient with a moderately enlarged heart who has stabilized and who has no failure may be acceptable. Patients with status anginosus are acceptable. They are often a greater operative risk than the patients with a history of a coronary infarct. While there is no age limit in selecting patients for this operation, patients more than 60 years of age or patients who had more than two myocardial infarctions offer a great surgical risk. Young patients who have rapidly progressive disease may have a poor result.

In addition, any associated condition, general or specific, which might influence the operative survival or rehabilitation in a specific case, must be weighed on its own merits. Among them are emphysema, bronchiectasis and diabetes.

Discussion

These operative procedures accomplish two things: They increase activity and decrease pain in a large majority of patients, and they increase life expectancy by protecting patients against further coronary occlusion.

The increase in total inflow is not as important as the distribution of the blood throughout the myocardium. The patient can be kept alive by a very small increase in blood flow if it is correctly distributed. An increase of 1 cm. a minute of backflow from the circumflex branch of the left coronary represents the difference between life and death. In a patient with coronary insufficiency, the effectiveness of the operation is greatly enhanced by the low coronary pressure and the myocardial ischemia. An operation which will increase the coronary backflow 0.8 to 1 cubic cm. a minute in an experimental animal will adequately protect the patient with coronary disease.

The described procedures, if properly done, all offer adequate protection to the patient. One must weigh the protection offered by any given procedure against the risk in any given patient and then decide as to the usefulness of the procedure. Obviously, in the poor risk patient, one may elect the simpler procedure even though the protection offered may be less. One must realize that the poudrage operations with or without grafts, epicardial abrasion and coronary sinus ligation, can be done with a mortality of about five per cent. The benefit and mortality will both depend entirely upon the group of patients selected.

In selecting patients for these procedures, one must evaluate each patient even though a set of criteria has been suggested. As time continues these criteria will change. Certainly these procedures are not ones to be used for prophylaxis. They should be used only on proved cases of coronary insufficiency. These operations cannot restore dead

or replaced myocardium. They cannot stop the progress of the disease within the coronary vessels.

Summary and Conclusions

1. The rationale of applying surgical operations in the treatment of coronary artery insufficiency is discussed.
2. Methods of improving the coronary circulation by application of surgical procedures are shown.
3. The methods of measuring the beneficial results of such operative procedures are described.
4. Several operative procedures are discussed and evaluated.
5. The operative results are shown.
6. Criteria for selecting patients are laid down.
7. The final conclusions are:
   a. More than 80 per cent of patients acceptable for operation can be helped.
   b. If both patient and operative procedure are properly selected, the mortality will be about five per cent.
   c. Patients cannot only be made more comfortable and useful but can be protected against subsequent coronary occlusion.
   d. Only patients with coronary insufficiency are acceptable. These procedures are not acceptable for prophylaxis.

Bibliography in full appears in the author's reprints.

An Improved Asepto
SYRINGE *For* BLADDER IRRIGATION

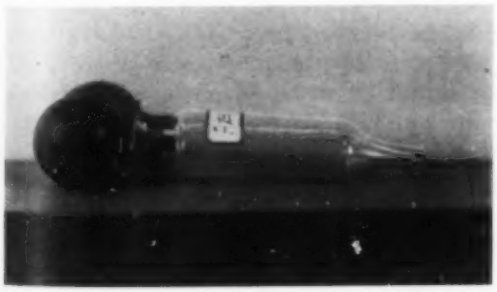
S. D. NEELY, M.D., and E. M. HENRY, M.D.

THE AUTHORS

Shade D. Neely, M.D. and Eugene M. Henry, M.D. are both Muskogee urologists. Doctor Neely was graduated from the University of Oklahoma School of Medicine and Doctor Henry was graduated from the University of Tennessee School of Medicine.

On numerous occasions we have been faced with the perplexing problem of removing foreign material, particularly blood clot from the bladder without having to subject the patient to anesthesia and manually removing it through a rigid instrument. The Toomey type syringe is quite expensive, around $9.50 each for a 50cc size. It is ground glass and if you break either part, it must be replaced with a new one. The metal tip also becomes dislodged at times. The disadvantage of the Ellik evacuator is that its tip is too large to use on the ordinary catheter. This evacuator we know was made to fit a resectoscope sheath.

We began experimenting with the two ounce Asepto Syringe made by Becton, Dickinson and Company. This regular syringe tip is too small to carry many blood clots. We tried filing this tip off and it worked much better.



Syringe A has had tip cut off. Syringe B is regular Asepto-2 ounce syringe.

We contacted the research department at Becton, Dickinson and Company and Mr. Oscar O. R. Schwidetzky was kind enough to make us up a syringe with a larger calibred point. We found that this syringe works very well or better than any other available at this time. Mr. Schwidetzky says this syringe is available now as "Asepto Syringe No. 2082" special, with Neely point. We use this syringe exclusively now in bladder irrigation. Naturally, the glass barrel and the syringe must make good contact and the rubber bulb must be of good quality. Comparing the price, this syringe is available at $18.00 a dozen. We can recommend this syringe as being the most practical method of removing foreign material from the bladder through any type catheter.

The Conservative Treatment of ESOPHAGEAL OBSTRUCTION *Due to Meat Impaction*

CHARLES K. HOLLAND, M.D. and ALLEN E. GREER, M.D.

Obstruction of the esophagus as a result of the impaction of meat is a relatively rare condition. However, it is common enough so that most physicians will see it sooner or later. The accepted method of treating this condition has been the passage of an esophagoscope, through which the meat is removed. This method requires a topical anesthetic and in some cases a general anesthetic, is a highly specialized procedure, and is not without danger. The mortality rate has been quoted at about one per cent. We wish to call attention to a simple method for removing these meat impactions which is effective, harmless, and may be carried out by any physician.

Meat impaction in the esophagus is seen most commonly in elderly individuals who are edentulous or wearing dental plates and in persons who have pathologic narrowing of the esophagus. As you all know, the normal esophagus has three points of physiologic narrowing, at the cricoid cartilage, at the level of the aortic arch, and at the point where the esophagus pierces the diaphragm. Obstruction usually occurs at one of these points.

The usual history obtained from these patients is that while eating they suddenly had a sensation of food lodging in the esophagus and have been unable to swallow solids or liquids without regurgitation. They are usually able to localize the site of obstruction fairly accurately. Most of them are seen within a few hours after the obstruction occurs; most of them have comparatively little pain but complain simply of being unable to swallow. However, if a great many hours or days have elapsed since the obstruction began, the patients may present a pitiful appearance of dehydration. severe pain on attempting to swallow, and exhaustion from lack of sleep and retching. Removing the meat impaction is desirable, although if no attempts are made to remove the meat, it will eventually putrify and pass spontaneously. However, from seven to 15 days are required for this to occur, and the mortality rate is exceedingly high because of secondary infection, mediastinitis, perforation of the esophagus, etc.

THE AUTHORS

Allen E. Greer, M.D., Oklahoma City, and Charles K. Holland, M.D., McAlester, are coauthors of The Conservative Treatment of Esophageal Obstruction Due to Meat Impaction. Doctor Holland graduated from Vanderbilt University and his specialty is internal medicine. Doctor Greer graduated from the University of Oklahoma School of Medicine and specializes in general and thoracic surgery.

Diagnosis of esophageal obstruction is established by radiologic examination. A small quantity of barium is all that is needed. It will not discomfort the patient except that it may cause coughing if the point of obstruction is near the cricoid. But even if such coughing occurs there will be no difficulty in establishing the diagnosis. Roentgenogram is essential also to rule out the presence of bone in the area of obstruction. Any bone should be removed through the esophagoscope since perforation of the esophagus or lower gastrointestinal tract may occur with conservative treatment.

The first report of using proteolytic enzymes administered by mouth on the impacted meat was by Richardson in 1945. He relieved the obstruction in 16 of 17 patients using caroid solution. The 17th patient was a failure because she could not retain the solution.

We wish to present a series of eight patients treated with proteolytic enzymes with successful relief of the obstruction in all patients.

Report of Cases

1. A white man, age 85, swallowed a large portion of chicken on August 16, 1951, and thereafter was unable to swallow solids or liquids. He was certain there were no bones

present as he had removed the chicken meat from the bone with his fingers. The patient localized the site of difficulty in the low retrosternal area. After a barium esophagram revealed a complete obstruction in the distal esophagus, his physician unsuccessfully tried to force the food bolus through the cardia by passing a large stomach tube.

The patient was admitted to the hospital four days after the onset of difficulty. Examination was of little aid, but the patient did show Parkinsonism, marked arthritis, and moderate obesity. He was edentulous.

On August 20, 1951, an esophagoscopy was performed under topical anesthesia; performing it was moderately difficult because of the immobility of the neck associated with cervical arthritis. The food bolus was visualized, and about one ounce was removed piecemeal.

The following day, a second attempt was made with the patient under general anesthesia. With the aid of consultation with another endoscopist, about the same amount of meat was again removed piecemeal.

On August 22, 1951, a physical examination revealed a right hydropneumothorax. This finding was verified by roentgenograms, and a lipiodol swallow showed a perforation of the esophagus just above the remainder of the meat bolus. Because of the patient's age and general debility, and because the family did not wish a major surgical procedure to be performed, conservative measures were carried out. They included thoracentesis, instillation of antibiotics in the chest, parenteral administration of penicillin and streptomycin, and finally the insertion of a chest tube in the right pleural space for constant drainage.

On August 27, 1951, Essence of Caroid was given in teaspoonful doses every 15 minutes for eight doses. The meat bolus disappeared, the lung re-expanded, and the perforation healed. The patient was discharged recovered.

This case illustrates the difficulty sometimes encountered in removing the meat impactions through an esophagoscope and the complications that may occur. It was this case that prompted us to try caroid solution as an easier method of removal.

2. A 77-year-old white man who was admitted to the hospital on August 22, 1952, said that he had developed esophageal obstruction 16 hours prior to admission. While he was eating roast beef without his dental plates, he felt something stick in his esophagus near the xyphoid. Since then he had been unable to swallow solids or liquids, and for the previous 12 hours he had been very uncomfortable on attempting to swallow. Barium swallow revealed complete obstruction of the esophagus near the diaphragm; there was no bone present and no dilatation of the esophagus above the obstruction. The patient was given Essence of Caroid, 4 cc., every 15 minutes. After receiving five doses, the patient regurgitated a portion of the meat. He was immediately relieved and two hours later was able to eat a soft diet without difficulty. Subsequent barium swallow revealed no abnormality of the esophagus. See illustration case 2.)

3. A 68-year-old white man, admitted to the hospital on April 7, 1953, had been unable to swallow solids or liquids since eating a pork sandwich 24 hours before admission. He complained of very little pain but had regurgitated all food and various medications taken during the previous 24 hours. The patient was edentulous. Barium swallow revealed complete obstruction of the esophagus at the junction of the middle and distal one-third but no dilatation of the esophagus above this level and no bone present. No caroid solution was available at this time, so the patient was given a solution of acidulated pepsin, 4 cc., every four hours. After five doses, the patient's obstruction was relieved, and he was able to take food and liquids without difficulty. Repeat barium swallow disclosed no abnormality of the esophagus.

4. A 50-year-old white man who was admitted to the hospital on December 6, 1953, had been unable to swallow food or liquids for the previous three hours. While he was eating steak, a bolus seemed to lodge at the level of the xyphoid. He tried to continue eating but the food would not pass, and after a few more mouthfuls he regurgitated undigested food. He had tried drinking water and various other liquids, but each time he regurgitated within a few minutes. At the time he was seen, he was having no pain ex-

A and B. Photograph of meat digestion by Caroid solution: A after 1 hour of digestion and B after 2 hours of digestion. Tube 1 is control with coarsely ground beef in water, tube 2 contains 1½ grains of Caroid, tube 3 contains 5 grains of Caroid, tube 4 contains 10 grains Caroid and tube 5 contains 15 grains Caroid.

A B

Note more complete digestion of meat with greater amounts of Caroid.

cept mild discomfort when he tried to drink water. The patient said that about two years before he had had a similar attack which subsided spontaneously after three hours. He said that he had had some difficulty in swallowing solid foods for the past five or six years. Barium swallow revealed complete obstruction at the lower end of the esophagus. No bone was present, and there was no dilatation of the esophagus above this region. Essence of Caroid, 4 cc., was given every 15 minutes. After 45 minutes, the patient experienced relief and was able to drink liquids. The following day repeat barium swallow revealed a normal esophagus except for a smooth, slight narrowing at the level of the diaphragm.

5. A white woman, a sanatorium attendant age 51, accidentally swallowed a large portion of unchewed roast beef. It caused immediate discomfort in the mid retrosternal area and inability to swallow liquids or solids. She made several unsuccessful attempts to induce vomiting.

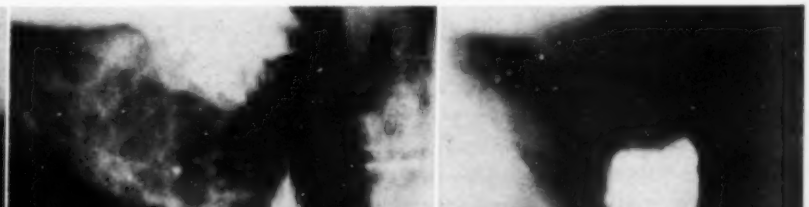
Physical examination was of little aid as no positive findings were elicited. The patient wore a partial denture.

Essence of Caroid was given in doses of one teaspoonful every half hour. The patient felt considerable discomfort during this time, but was completely relieved after several doses. She said that she could feel the meat bolus slip through and at this time noted a dull type of pain.

Subsequent barium studies were normal.

6. A 60-year-old white woman had had a piece of roast beef stuck in her esophagus for an hour before she was admitted to the hospital on April 9, 1954. Since then, she had regurgitated all foods and liquids. She complained of a sense of constriction beneath her lower sternum but was not in acute distress. She wore dentures. Barium swallow revealed complete obstruction of the esophagus just above the diaphragm; no bone was present, and there was no dilatation of the esophagus above the point of obstruction. Essence of Caroid solution, 4 cc., was given every 15 minutes. After four doses of this medication, the patient suddenly regurgitated

CASE 2



CASE 8

Case 2. Esophagram showing almost complete obstruction with particles of food in lower ⅓ of esophagus. A normal esophagus was demonstrated after relief of the obstruction.

Case 8. Esophagram shows complete obstruction just above the diaphragm. Follow up film after obstruction relieved shows normal esophagus with large hiatus hernia.

two large pieces of meat and thereafter had no difficulty swallowing. Barium swallow on the following day disclosed no abnormalities.

7. A white boy, age two and one-half years, was first known to have a congenital stricture of the esophagus when he was 15 months old. Subsequent dilatations were effective, but there persisted a localized narrowing through which a size 34 F. mercury weighted bougie could be passed.

On April 17, 1955, the boy swallowed a portion of a frankfurter which lodged above the area of slight stenosis. He felt some discomfort, and he was unable to retain even small amounts of water.

No roentgenograms were made as the nature of food ingested was known. Essence of Caroid gave relief after the fourth dose (15 minute intervals between doses). No ill effect was noted following this episode.

8. A white man, age 61 years, was admitted to the hospital because of choking on a piece of meat. He had had a history of intermittent dysphagia for three years and some indigestion. The latter was characterized by retroxyphoid discomfort and eructations relieved by soda. He had occasionally had tarry stools. On August 8, 1954 he choked on a portion of steak and thereafter had a deep seated sensation of discomfort in the lower thorax, with nausea and vomiting. The vomiting yielded blood and blood-streaked mucus. On two previous occasions food had seemed to stop in the same area but had passed on through after a time. In addition to these symptoms, he very often had to wash food down with liquids.

Physical examination revealed an obese, edentulous man of middle age. Nothing else of aid was found on examination.

A barium swallow showed a complete obstruction of the esophagus in the distal one-third.

After several doses of Essence of Caroid, the patient vomited up a large bolus of meat, which had a very slick outer surface.

A barium swallow on the following day showed a moderate sized hiatus hernia. The patient was discharged from the hospital asymptomatic. The recurrent digestive complaints were considered due to the hiatus hernia, but surgical correction was declined by the patient. (See illustration case 8, 1 and 2.)

Discussion

The active ingredient of caroid is papain, a grayish-white powder derived from the green fruit of the tropical Carica papaya tree. Papain possesses powerful proteolytic enzymes which are able to digest from 35 to 100 times its weight of lean meat. The enzyme is readily soluble in glycerine, alcohol or water. It is active in acid, neutral, and alkaline media equally and therefore has a distinct advantage over pepsin, a weaker proteolytic enzyme which requires a strongly acid medium. Papain is used extensively industrially in meat tenderizers, in the tanning industry, and in making chewing gum. It is produced medically by the American Ferment Company under the trade name "caroid." Various caroid preparations are available and have been used extensively for many years in medicine as Alcaroid powder, which is caroid added to a mixture of anti-acids, and caroid and bile salts, which we are sure is familiar to all. Essence of Caroid is a stable, aqueous - glycerine - alcohol solution containing one and one-half grains of caroid powder per dram. Caroid powder is available and is a more stable preparation than the elixir.

In years past, papain preparations have been used extensively in medicine for treating various types of indigestion, for local application on wounds and burns to digest off the non-viable tissue and for local application to the peritoneal cavity in abdominal operations to prevent the formation of adhesions. These uses have been largely abandoned, but it has been well established that almost no toxic effects are related to the use of papain. It will not digest living tissue and has been found entirely harmless when taken orally in large amounts.

The dose we have used is four cc. of the caroid solution which contains 1.5 grains of papain administered every 15 minutes. If larger does of caroid powder are used, such as five to 15 grains administered in 5-10 cc. of liquid, faster digestion of the meat is expected. Complete digestion of meat is not necessary to relieve esophageal obstruction, as the meat softens on the outer surface, becomes slick, and passes on through.

A word of caution should be given concerning the potency of caroid preparations. Since they lose potency after several weeks or months, most of the enzymetic action may be lost if one uses a preparation that has been on the druggist's shelf for a year or more. Liquid preparations are more unstable than the powder. Practically all meat tenderizer powders sold in grocery stores contain papain and may be administered by mouth if caroid is not available. (See illustrations A and B.)

Summary

A simple and safe method for removing meat impactions in the esophagus obviates the need for esophagoscopy and instrumental removal of the meat. Although this method was reported in literature 10 years ago, it is not being used as extensively as we believe it should be. This simple method consists of the oral administration of caroid, a powerful proteolytic enzyme, in small quantities at 15 minute intervals.

All of our patients obtained prompt relief, and there were no complications. Roentgenogram examinations of these patients is important, both to establish the diagnosis and to rule out the presence of bone in the obstruction. It is also important to re-examine these patients with a barium swallow after the obstruction is relieved to rule out any associated pathologic condition. Esophagoscopy should be carried out in patients who continue to have dysphagia subsequently, although the esophagram appears normal.

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STANDARD DEVIATION

(Continued from Page 70)

Hospital I's standard deviation was .4 per cent and Hospital II's was .2 per cent. The square of .4 per cent is .16 per cent and the square of .2 per cent is .04 per cent. These are then added to give a total of .2 per cent. Reverting back to the original figures the square root of this is approximately .45 per per cent. Subtracting Hospital II from Hospital I (8.5 per cent — 7.9 per cent) we see a difference of .6 per cent. Since this is not two times as great as the .45 per cent standard deviation for the two hospitals combined, the variation in these two hospitals could be due to chance alone and not to better treatment.

All too frequently we read an article in which a physician reporting and advocating a certain treatment for a malady states he treated 150 patients and had a survival rate of 20 per cent. He then blows his method of treatment up as being much better than another physican's method because the other had only a 15 per cent survival rate. (The author inadvertently failed to give the number of the latter's cases.)

But you still have him stumped—you don't always need the other physician's number of cases to compare efficacy of the methods. Simply use this formula: 150 cases x 20 per cent = 30 cases that survived. The square root of 30 is 5.5. Now the survival rate of 20 per cent divided by 5.5 per cent is 3.5 per cent, which is the standard deviation. The author's survival rate was 20 per cent and the other physician's was 15 per cent or a difference of five per cent. However, two times the standard deviation of 3.5 per cent = 7.0 per cent. For the author's method to be the result of a better method of treatment rather than due to chance, he would have had to exhibit more than a seven per cent difference.

If all medical readers would do these fairly fast and not too complicated calculations (a slide rule is not necessary—just a quick brush up on square root), the value of our medical articles would improve by forcing the investigator into being more careful to re-check before he makes a positive statement. A positive statement cannot be made from statistics—just a probable statement. —T.C.P.

MICTINE* — ORAL NON-MERCURIAL DIURETIC

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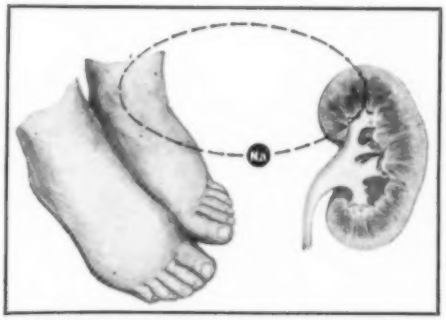
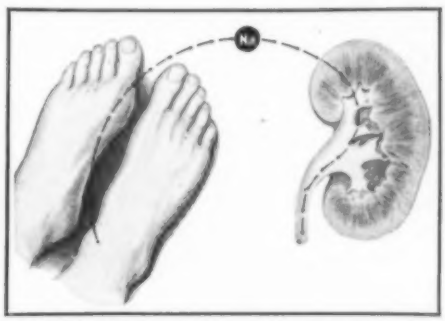


WITHOUT MICTINE — *Prior to diuretic therapy excessive sodium and water are characteristically retained in the edematous patient.*



WITH MICTINE — *Inhibition of the reabsorption of sodium ion leads to an increased excretion of sodium ion, water and chloride.*

An effective diuretic has been described as one which causes excretion of water, sodium and chloride in amounts sufficient to reduce the edema but not to result in salt depletion.

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As with most effective therapeutic agents, in high dosage Mictine may cause some side effects in some patients; however, on three tablets daily side effects (anorexia and nausea, rarely vomiting, diarrhea or headache) are minimal or absent.

Clinically, Mictine is useful in the maintenance of an edema-free state in all patients and for initial and continuing diuresis in mild or moderate congestive failure. It is not intended for initial diuresis in severe congestive failure unless either sensitivity or tolerance to other diuretics has developed in the patient.

The maintenance dosage of Mictine, as well as for initial diuresis in mild or moderate congestive heart failure, is one to four 200-mg. tablets daily in divided doses; the dosage for initial diuresis in severe congestive failure, under the conditions already described, is four to six tablets daily. For either use, it is recommended that Mictine be prescribed with meals on interrupted dosage schedules; that is, prescribing Mictine on alternate days or for three consecutive days and omitting it the next four days.

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Association Activities

PRESIDENT'S LETTER

If you have not read current proposed legislation in Congress, especially HR-7225, now in the Ways and Means Committee of the Senate, you, every citizen, should familiarize yourselves with the projected amendments to the present Social Security System. HR-7225, among other things, proposed two amendments, namely, the lowering of retiring age of women from 65 to 62 and Disability Benefits to any person who, at the age of 50 or above, can get any physician to declare him totally and permanently disabled. This disability benefit is full coverage from there on unless and until the Social Security Administration can prove that he is not disabled.

The Ways and Means Committee of the House passed HR-7225 without hearings, to the floor of the House. The House passed, in its entirety, HR-7225 with only 31 dissenting votes. This was done with very limited debate in the House. Such speedy action is not by any yardstick conducive to good legislation.

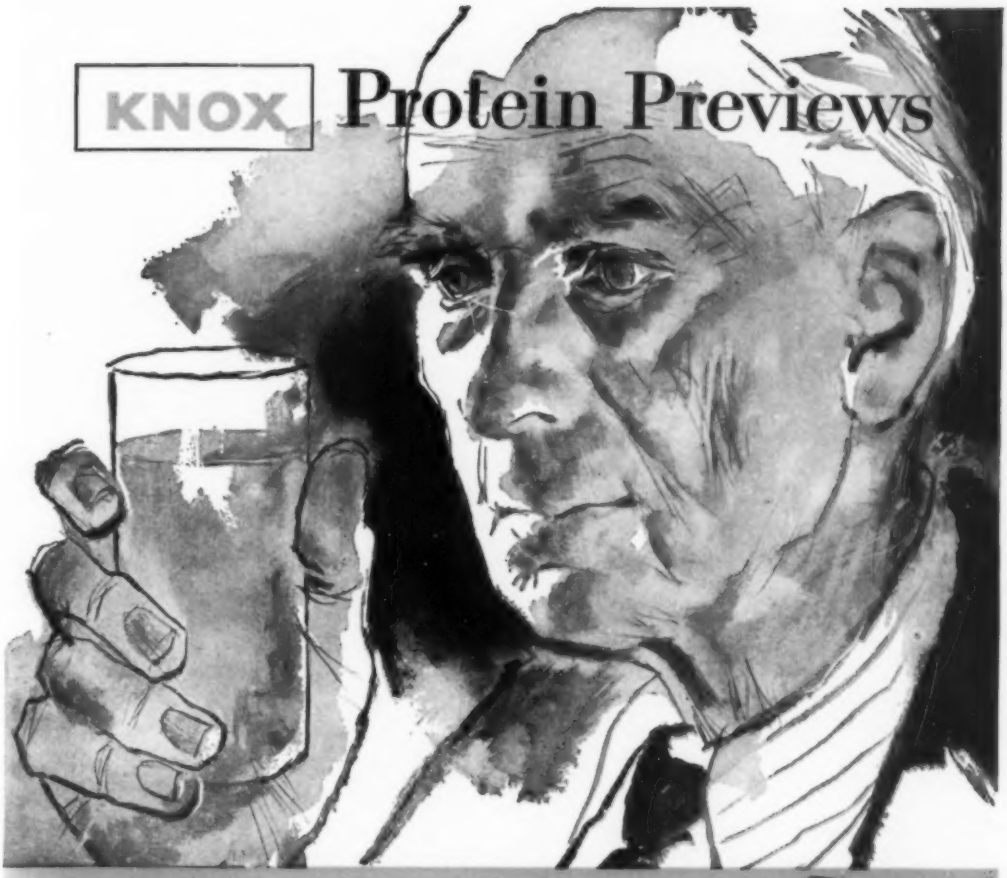
The Finance Committee of the Senate is hearing representatives of professional, and vocational and business organizations on these proposed amendments. Last Thursday Doctor Malcolm Phelps and I, along with representatives of nine other State Medical Associations, testified before this Committee.

Never has the writer seen nine men in any profession or vocation individually and collectively make and hold a line of defense against the bombardment of senatorial questions so well. Never has the writer been so proud of any group of doctors. It was heartening and the over-all reception was most excellent.

This observation was been presented with the hope that you will study the provisions in HR-7225. If you do, you will not have to be asked to do something about this far reaching legislation—legislation that will breed dishonesty, take away incentive, foster indolence, and probably break down the whole current Social Security System by its own tax burden. It is time that we, as citizens, do something that will preserve some rights and privileges as taxpayers.

R. Q. Goodwin

President



Maintaining Lean Body Mass in the Edentulous Geriatric Patient

Extensive loss of body protein can occur in either the spare or obese geriatric patient. But whatever the patient's somatotype, a decrease in lean body mass is usually the result of inadequate protein intake due to poor dentition, slowed-down digestion and quite frequently, unappetizing main dishes.

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ANNOUNCEMENTS

Oklahoma State Medical Association
Annual Meeting, May 6, 7, 8, 9. Municipal Auditorium, Oklahoma City.

American Medical Association
Chicago, Ill., June 11-15. Complete details appear in each issue of the *J.A.M.A.*

Third National Cancer Conference
Detroit, Mich., June 4, 5, and 6. Copies of the program and registration cards may be obtained from the National Cancer Conferences Coordinator. American Cancer Society, 521 West 57th St., New York 19, N. Y.

American Academy of Obstetrics and Gynecology
Fourth Annual Interim meeting of District VII, Peabody Hotel, Memphis, March 9-10.

International Academy of Proctology
Eighth Annual Convention, Drake Hotel, Chicago, April 23-26. E. Evans Chambers, M.D., Enid, is councilor for Oklahoma. Further details may be had by writing Dr. Alfred J. Cantor, Secretary, International Academy of Proctology, 147-41 Sanford Ave., Flushing 55, N. Y.

American College of Gastroenterology
Southern region meeting Sunday, April 8, New Orleans, Louisiana State University School of Medicine. Copy of the program may be obtained from the Secretary, American College of Gastroenterology, 33 West 60th St., New York 23, N. Y.

American Heart Association
Annual Scientific Sessions, Cincinnati, Ohio, October 27-October 31, Music Hall. Headquarters hotel will be the Netherlands-Plaza. Those wishing to present papers or scientific exhibits must make application no later than Tuesday, May 15. Application forms may be obtained from the Medical Director, American Heart Association, 44 East 23 St., New York City, N. Y.

American Board of Obstetrics and Gynecology
Next scheduled examinations (Part II) will be conducted at the Edgewater Beach Hotel, Chicago, by the entire Board from May 11 through May 20. Information may be obtained from the Secretary, 2105 Adelbert Road, Cleveland 6, Ohio.

Rural Health Conference Held in Portland, Oregon

"The Doctor's Responsibility in the Physician-Patient Relationship" was the theme of the 11th National Conference on Rural Health held in Portland, Oregon, March 8-10. Representing the Oklahoma State Medical Association were R. C. Emmott, M.D., Stilwell, Chairman of the Rural Health Committee, and Don Blair, Associate Executive Secretary.

Discussions were held on responsibility in over-all community health, getting the patient's cooperation, advising families about physical examinations and community health surveys and their part in family relationships. Mental health and problems of the aged were also discussed along with "Uses and Abuses of Health Insurance" and practical, detailed reports on successful programs carried out in the past year were given.

Oklahoma State Heart Association
Two week course which will give two hours of college credit will be offered at the University School of Medicine May 28 through June 8. Entitled "The Heart Patient," it will be open to 30 applicants. A brochure will be available soon. Complete information may be obtained from the Oklahoma State Heart Association office, 825 N. E. 13th St., Oklahoma City 4, Okla.

General Surgery Short Courses
Offered at the University of Oklahoma School of Medicine April 11 and May 9. April 11 course is entitled "Anticipation and Reduction of Surgical Risk" and "Surgery of the Neck and Oral Cavity" is the title of the May 9 course. Applications for registration should be sent to the Office of Postgraduate Instruction, University of Oklahoma School of Medicine, 801 N. E. 13th, Oklahoma City.

Anesthesiology Short Course
Offered at the University of Oklahoma School of Medicine June 13. Applications should be made to the Postgraduate Office at the Medical School.

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East Central Society Announces Program

The East Central Medical Society has announced the program for the Clinical Meeting of the Society Saturday, April 7, 1956. The subject is the "Acute Abdomen" and sessions will be held in the Auditorium of the Veterans Administration Hospital. All O.S.M.A. members are invited to attend. Maurice C. Gephardt, M.D., is Program Chairman. Program is as follows:

2:00-2:45 p.m.—The Acute Abdomen and the Internist; J. P. Colmore, M.D., Department of Medicine, University of Oklahoma School of Medicine.

2.45-3:30 p.m.—The Acute Abdomen and the Surgeon; Harvey R. Butcher, M.D., Department of Surgery, Washington University School of Medicine, St. Louis, Mo.

3:30-4:15 p.m.—The Acute Abdomen and the Radiologist; Simon Dolin, M.D., Department of Radiology, University of Oklahoma School of Medicine.

4:15-4:30 p.m.—Intermission.

4:30-5:30 p.m.—Presentation of Cases to Stump the Panel.

7:30-8:15 p.m.—Dinner (place to be announced).

8:15—"New Zealand and Socialized Medicine"; Howard C. Hopps, M.D., Professor of Pathology, University of Oklahoma School of Medicine.

Price of the dinner is $5.00 per plate. Reservations should be made in advance with M. C. Gephardt, M.D., Program Chairman, 443 N. 16th St., Muskogee, Oklahoma.

Appointment Reminders

Appointment reminder cards for physicians of Oklahoma are available in packages of 300, through Blue Cross-Blue Shield, according to Carl E. Behle of the Professional Relations Departments.

The card, which is billfold size, has space for the patient's name, the date and hour of the appointment and the doctor's name and address. The Blue Cross and Blue Shield emblems are printed on the reverse side.

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REFERENCE: 1. Silcox, L. E., *A.M.A. Arch. Otolaryng.* 60:431, Oct. 1954.

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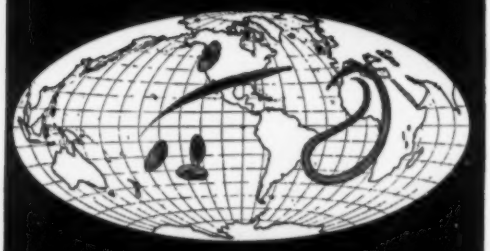

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PHYSICIAN PLACEMENT

The following physicians have expressed a desire to locate in Oklahoma. To the best of our knowledge, the names, addresses, qualifications and availability are current and accurate.

The asterisk beside some names indicates that additional information concerning the physician is available in this office.

Anesthesia

*Daniel B. Perry, Residence Quarters, Harlem Hospital, New York, N. Y., age 48, Meharry Medical College, 1948, interned at Harlem Hospital, New York and served residency in anesthesia there, veteran, available December, 1957.

General Practice

*Allen J. Alderman, 1104 Lincoln Drive, Great Falls, Mont., age 28, University of Nebraska, 1954, available upon release from active duty, July 1, 1956.

*A. Stanley Bailey, Jr., 250 Highland, Apt. 102, Highland Park 3, Michigan, age 26, University of Oklahoma School of Medicine, now interning at Highland Park Hospital, available July 1, would prefer salaried position.

*Charles Dail Davenport, 814 N. Elm, Hoisington, Kansas, age 30, University of Oklahoma School of Medicine, 1953, veteran, available July, 1956.

*John V. Hume, 931 W. 15, Pueblo, Colo., age 31, University of Colorado 1953, residency in general practice, veteran, availability unknown.

*Elmer D. Peffly, Capt., USAF (MC) Aviation Medical Examiner, 3545th USAF Hospital, Office of the Flight Surgeon, Goodfellow Air Force Base, Texas, age 34, University of Oklahoma School of Medicine, 1953, interned at Wesley Hospital, Oklahoma City, available July, 1956.

*Wilmer G. Sheldon, 32 Williams, S. E., Minneapolis, Minn., age 33, University of Minnesota, 1955, veteran, available upon completion of internship, July, 1956.

Internal Medicine

*C. A. Loughridge, 1107 E. Upsal St., Philadelphia 19, Pa., age 36, College of Physicians and Surgeons Columbia University 1954, in internal medicine residency at Philadelphia General Hospital, available between July and September, 1956.

Orthopedics

Robert E. Landstra, American Legion Hospital for Crippled Children, 2350 Lakeview Ave., St. Petersburg, Florida, age unknown, now in orthopedic residency training, availability unknown.

Pathology

*Jess D. Green, Jr., 1765 South Victor, Tulsa, age 32, George Washington University, 1950, will finish four years pathology residency in January, 1957, will consider immediate placement if board requirements are not necessary.

*William McIntosh Hindman, Receiving Hospital, Detroit, Michigan, age 38, University of Tennessee, 1945, four year pathology residency, Detroit Receiving Hospital, Board eligible, available July, 1956.

Pediatrics

*Leslie W. Langley, Jr., 1709 De Pauw Ave., New Albany, Ind., age 32, University of Louisville School of Medicine, 1953, now taking second year of pediatric residency, veteran, available July 1, 1956.

*Carl Frederick Wagner, 130 E. Shields, Cincinnati 20, Ohio, age 48, University of Cincinnati, 1935, interned University Hospital of Cleveland and served residency at Cincinnati, 1935, veteran, prefer clinic or associate, available May 1, 1956.

Surgery

*Albert Frederick Cunningham, U. S. Naval Hospital, Memphis, Tenn., age 35, University of Arkansas, 1947, available April 15, 1956.

*Edward Wendell Foster, 147 W. Main, Meriden, Conn., age 62, Harvard University School of Medicine, 1924, certified by specialty board, veteran, available now, would consider surgery, obs.-gyn., or general practice.

*C. Richard Jernigan, Parkland Memorial Hospital, Dallas, Texas, age 29, Southwestern Medical College 1948, will be Board qualified in General Surgery January 1, 1956, veteran, available January 1, 1956.

*Arthur Andrews McMurray, 3203-B Cherrywood, Rd., Austin 2, Texas, age 35, University of Tennessee, 1950, Board eligible in general surgery, veteran, available July, 1956.

(Continued on Page 101)

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Bumbalo, T. S., Gustina, F. J., and Oleksiak, R. E.: J. Pediat. 44:386, 1954.

White, R. H. R., and Standen, O. D.: Brit. M. J. 2:755, 1953.

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Brown, H. W.: J. Pediat. 45:419, 1954

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Do You Have A Suggestion On Accreditation of Hospitals?

The June, 1955, House of Delegates of the American Medical Association authorized the appointment of a committee to review the functions of the Joint Commission on Accreditation of Hospitals.

The purpose of the committee was to make an independent study and survey as to whether the present program of accreditation was working a hardship on either the hospitals, staff members, or the securing of membership on staffs of hospitals.

Doctor Burton on Committee

Appointed to this important committee was John F. Burton, M.D., of Oklahoma City. Doctor Burton states that he would like to have as many Oklahoma hospitals and physicians as possible give their views to the committee.

The committee is especially interested in the following:

1. The general understanding by physicians of the functions of the Joint Commission.

2. Whether the method of appeal from an adverse ruling regarding accreditation is satisfactory.

3. The effect on the individual physician's hospital connections due to actions of the Joint Commission.

4. Whether any organizations not now represented should have official representation on the Joint Commission.

5. The effect of the Joint Commission's requirements concerning such matters as staff meetings.

6. The pros and cons of separating administrative and professional accreditation functions in the inspection of hospitals.

7. Constructive suggestions for improving the hospital accreditation program.

Anyone having comments to make on the problems of accreditation should write either to W. C. Stover, M.D., Chairman, Committee to Review Functions of Joint Commission on Accreditation of Hospitals, 535 North Dearborn St., Chicago 10, Ill., or to John F. Burton, M.D., 434 N. W. 13th St., Oklahoma City, Okla.

Medical Societies Around the State

Stephens County

J. P. Keller, M.D., Duncan, was recently elected president of the Stephens County Medical Society. Casper H. Smith, Jr., M.D., was named vice-president and Dwight Weedn, M.D., secretary-treasurer. All are from Duncan. Allen Green, M.D., Oklahoma City, was guest speaker at the meeting.

Garfield-Kingfisher

Richard M. Burke, M.D., Oklahoma City, spoke on Tuberculosis at the Garfield-Kingfisher County Medical Society recently.

Cherokee-Adair

Mark Everett, Dean of the University of Oklahoma School of Medicine, was guest speaker at a recent meeting of the Cherokee-Adair Medical Society held in Stilwell. Purpose of his visit was to discuss establishing a preceptor program in that city.

Seminole-Hughes

A. R. Carney, M.D., Tulsa, was guest speaker at a recent meeting of the Seminole-Hughes County Medical Society.

East Central

Members of the East Central Medical Society held installation ceremonies and a dinner-dance at the Severs Hotel of Muskogee in January. New officers are Marvin Elkins, M.D., president; John R. Rafter, M.D., vice-president; E. F. Stratton, M.D., secretary; and Tom Gafford, M.D., is outgoing president.

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DOCTOR WANTED: In Walters, Oklahoma, a county seat town of 3,000 population, with trade territory of 4000. Office available within one block of licensed hospital. Contact Luther Eubanks, President, Walters Chamber of Commerce.

WANTED: General practitioner, town of 1500 population, southwest Oklahoma, modern brick buildings available, partly furnished, would be only doctor in Tipton Valley. New county hospital 14 miles on pavement. Lucrative practice awaits man who can take over. For information, write or call Paul Largent, Tipton, Oklahoma.

OKLAHOMA CITY OFFICE SPACE. Located across from St. Anthony Hospital and Pasteur Building, includes private parking facilities, air conditioning, X-ray, laboratory and other equipment. Formerly occupied by physician who has specialized in other work. For full information contact Jack Barthold at P.O. Box 6246, Oklahoma City 11, or call GA 7-2441, Oklahoma City.

FOR SALE: Latest model Beck-Lee Cardiall. Used less than 10 times, $350.00. Unused Leitz Photrometer $125.00. Both for $450.00. William A. Vint, M.D., Veterans Administration Hospital, Oklahoma City.

WANTED IMMEDIATELY: Man interested in general practice in association with established physician in the greater Oklahoma City area, with possible part ownership in the future. Write Key R, care of the *Journal*.

SPACE AVAILABLE. On May Avenue, Oklahoma City, immediately, near proposed Baptist Hospital site for qualified obstetrician. No long term lease required. Contact C. M. Harvey, M.D., 2900 N.W. 67th, Oklahoma City, Okla.

FOR RENT OR LEASE: New modern medical building, located in center of several of Tulsa's large new housing additions. Year round air conditioning. Adequate parking. Ideal location for General Practice. One or two doctors. Write Key C, care of the *Journal*.

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FORT WORTH

BOOKS RECEIVED

The following books have been received by the *Journal* office. As space permits and the context warrants, books will be reviewed.

VASCULAR SURGERY. Medical Department, United States Army, Surgery in World War II. Edited by Daniel C. Elkin, M.D. and Michael E. DeBakey, M.D. Office of the Surgeon General, Department of the Army, Washington, D. C., 1955.

HAND SURGERY. Medical Department, United States Army, Surgery in World War II. Edited by Sterling Bunnell, M.D. Office of the Surgeon General, Department of the Army, Washington, D. C., 1955.

LIFE STRESS AND ESSENTIAL HYPERTENSION, A Study of Circulatory Adjustments in Man. Stewart Wolf, M.D., Philippe V. Cardon, Jr., M.D., Edward M. Shepard, M.D. and Harold G. Wolff, M.D., The Williams and Wilkins Company, 1955.

CIBA FOUNDATION COLLOQUIA ON AGEING. Vol. 1, General Aspects. Editors, G. E. W. Wolstenholme, O.B.E., M.A., M.B., B.Ch. and Margaret P. Cameron, M.A., A.B.L.S., assisted by Joan Etherington. Little, Brown and Co., Boston, 1955.

CIBA FOUNDATION SYMPOSIUM ON EXPERIMENTAL TUBERCULOSIS, Bacillus and Host with an Addendum on Peprosy. Editors, G. E. W. Wolstenholme, O.B.E., M.A., M.B., B.Ch. and Margaret P. Cameron, M.A., A.B.L.S., assisted by Cecilia M. O'Connor, B.Sc., Little, Brown and Co., Boston, 1955.

HYPNOTIC SUGGESTION, Its Role in Psychoneurotic and Psychosomatic Disorders, New York, Philosophical Library, 1956.

THE NATIONAL FORMULARY. Published by the American Pharmaceutical Association, Washington 7, D. C., Distributed for the Association by J. B. Lippincott Co., Philadelphia and Montreal, 1955.

PREVENTIVE MEDICINE IN WORLD WAR II. Medical Department, United States Army, Vol. III, Personal Health Measures and Immunization. Editor in Chief, Col. John Boyd Coates, Jr., M.C., Editor for Preventive Medicine, Ebbe Curtis Hoff, Ph.D., M.D., Assistant Editor, Phebe M. Hoff, M.A., Office of the Surgeon General, Department of the Army, Washington, D. C., 1955.

PREVENTIVE MEDICINE IN WORLD WAR II. Medical Department, United States Army, Vol. II, Environmental Hygiene. Editor in Chief, Col. John Boyd Coates, Jr., M.C., Editor for Preventive Medicine, Ebbe Curtis Hoff, Ph.D., M.D., Office of the Surgeon General, Department of the Army, Washington, D. C., 1955.

Poison Information Center May Be Established in State

Through the cooperation of the University of Oklahoma School of Medicine, the Oklahoma State Health Department and the Oklahoma State Medical Association, there has been discussion concerning the establishment of a Poison Information Center.

H. A. Shoemake, Ph.D., Professor of Pharmacology at the Medical School; John Shackelford, M.D., of the State Health Department; and H. V. L. Sapper, M.D., Oklahoma City, representing the Association, recently met in Dallas, Texas, with Dr. Edythe P. Hershey, Regional Director of the Children's Bureau, to discus sthe possibility of receiving some financial assistance. The Center would be established at the Medical School on a 24 hour basis and would be designed to service both the State of Oklahoma and Texas. If plans are completed for the establishment of the center, allied groups and outside agencies that would be interested in the program will be asked to appoint representatives to act in an advisory capacity.

Physician Placement

(Continued from Page 95)

Urology

Woodrow Payne, M.D., 764 McConnell, Memphis, Tenn., age 34, University of Tennessee, 1944. Board Qualified in Urology, veteran, available July, 1956. (Wants city 20,000-75,000 — private proup, partnership).

*Henry Ernest Wolfe, Jr., 879 Rosewood Ave., Vallejo, Calif., age 34, Albany Medical College, 1947, board qualified in urology, available upon separation from active duty, Aug. 15, 1956.

Southwestern Surgical Congress Meets April 16-18, in Tucson

The Eighth Annual Meeting of the Southwestern Surgical Congress will be held in Tucson, Arizona April 16, 17, and 18. Charles R. Rountree, M.D., Oklahoma City, is President and C. M. O'Leary, M.D., also of Oklahoma City, is Secretary-Treasurer. Partial program is listed below and complete programs may be obtained by writing Miss June Marchant, Executive Secretary, Southwestern Surgical Congress, 207 Plaza Court Building, Oklahoma City 3, Okla.

Monday, April 16

9:00 a.m. The Frozen Shoulder — Case Analysis with Reference to Treatment
Robert M. Lee, M.D., Fort Collins, Colo.

9:20 a.m. Surgical Management of Pigmented Lesions
Charles E. Lockhart, M.D., Springfield, Mo.

9:40 a.m. Extrophy of the Urinary Bladder, Plastic Repair Combined with Bilateral Osteotomy of Illium
William G. Schultz, M.D., Tucson, Arizona

10:00 a.m. The Urologic Significance of Imperforate Anus
Ian M. Thompson, M.D. and Charles A. Hooks, M.D., Galveston, Tex.

10:20 a.m. Immediate and Delayed Repair of Hand Injuries
Joseph H. Boyes, M.D., Los Angeles

11:00 a.m. Visual Aids in Surgical Presentations
Thomas G. Orr, Jr., Kansas City, Kans.
Congenital Dislocation of Hip in the Apache Indian
John R. Schwartzmann, M.D., Tucson, Arizona

12:20 p.m. Roundtable Luncheon

2:00 p.m. Panel — Industrial and Rural Injuries of the Hand

3:00 p.m. Use of Lyophilized Homografts on Dura Mater in the Repair of Hernias
Francis C. Usher, M.D., Houston, Tex.

3:20 p.m. Use of Full Thickness Skin Grafts to Repair Difficult Hernias
Vincent L. Rees, M.D., Salt Lake City, Utah

3:40 p.m. Hiatus Hernia: Surgical Indications
Francis A. Barrett, Jr., M.D., Cheyenne, Wyoming

4:00 p.m. Experience in the Surgical Management of Interatrial Septal Defects and Pulmonic Stenosis under Hypothermia
John M. Salyer, M.D., Clinton S. Lyter, M.D., Byron E. Pollock, M.D., Denver, Colorado

Tuesday, April 17

7:30 to
9:00 a.m. Breakfast Meeting — Moderated by Kenneth C. Salyer, M.D., Denver, Colo.
Congenital Arteriovenous Fistula
H. Calvin Fisher, M.D. and Marvin E. Johnson, M.D., Denver, Colo.
Acute Arterial Injuries in Civilian Practice
Oscar Creech, Jr., M.D. and Michael DeBakey, M.D., Houston, Tex.
Treatment of Peripheral Arteriosclerotic Disease by Arterial Homografting
Dale J. Austin, M.D. and Jesse E. Thompson, M.D., Dallas, Tex.
Necrotizing Panarteritis Following Repair of Coarctation of the Aorta
John B. Grow, M.D., Charles V. Demong, M.D. and W. R. Rundles, M.D., Denver, Colo.

9:00 a.m. The Management of Massive Upper Gastro-Intestinal Hemorrhage
Edwin M. Sykes, Jr., M.D. and Asher R. McComb, M.D., San Antonio, Tex.

9:20 a.m. A Critical Evaluation of the Bilroth II Type Gastro-Jejunostomy
Howard T. Robertson, M.D., Denver, Colo.

9:40 a.m. Surgical Complications of Diverticulitis and Diverticulosis of the Sigmoid Colon
J. B. Littlefield, M.D., Tucson, Arizona

10:00 a.m. Acute Appendicitis in the Elderly Male
William J. Gillesby, M.D. and Curt M. O'Rielly, M.D., Hines, Ill.

10:20 a.m. Anesthesia in the Aged and Poor Risk Patient
John Adriani, M.D., New Orleans, La.

11:00 a.m. Examination of the Breast
Dudley Jackson, M.D., San Antonio, Tex.
Demonstration of New Electronic Instrument—The "Cardiocaster"
Paul D. Keller, M.D., Salt Lake City, Utah

12:20 p.m. Roundtable Luncheon

2:00 p.m. Panel — New Concepts and Recent Advances in Anesthesia

3:00 p.m. Presidential Address — Polio Vaccination Program in Oklahoma, and in the Southwest in General
Charles R. Rountree, M.D., Oklahoma City

Wednesday, April 18

7:30 a.m. to
9:00 a.m. Breakfast Meeting — Moderated by Leonard P. Eliel, M.D., Oklahoma City

Adrenal Support in the Surgical Patient

Albert E. James, M.D. and Robert Woodruff, M.D., Denver, Colo.

Functioning Tumors of the Adrenal Cortex

L. L. D. Tuttle, M.D. and William B. Gordon, M.D., Houston, Tex.

Urinary Chloride Concentration as an Aid in the Diagnosis of Acute Adrenocortical Insufficiency

J. Robert Spencer, M.D. and William H. Wierman, M.D., Denver, Colo.

9:00 a.m. **The Diagnosis and Treatment of Mixed Tumor of the Parotid Gland**

Robert A. Wise, M.D., Portland, Oregon

9:40 a.m. **Neonatal Respiratory Problems Exclusive of Central Nervous System Cases**

Hector W. Benoit, Jr., M.D. and John H. Mayer, Jr., M.D.

10:00 a.m. **A Photographic Study of the Superior and Inferior Thyroid Arteries and the Superior and Inferior Laryngeal Nerves**

Bernard T. Daniels, M.D., Durwood C. Clader, M.D. and Patrick W. Luter, M.D., Denver, Colo.

10:20 a.m. **Cholecystostomy in Modern Surgery**

Cyril Costello, M.D., St. Louis, Mo.

10:40 a.m. **Annular Pancreas**

L. H. Wilkinson, M.D. and A. G. Simms, II, M.D., Albuquerque, New Mexico

11:00 a.m. **Panel — Carcinoma of the Breast**

Included in the entertainment will be a banquet, barbecue and a trip to Old Mexico. Special entertainment is also planned for the ladies attending and facilities for golf, fishing and other sports are available.

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Krantz, J. C., Jr., and Carr, C. J.: The Pharmacologic Principles of Medical Practice, ed. 3, Baltimore, The Williams and Wilkins Company, 1954, p. 998.

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Deaths

J. PAUL JONES, M.D.
1866-1956

J. Paul Jones, M.D., pioneer Washita county physician, died at his home in Dill City January 9.

Doctor Jones was born at Douglas, Nacogdoches county, Texas, March 24, 1866. He attended Vanderbilt University Medical School and Kansas Medical College.

He practiced medicine in Texas until November, 1898, when he moved to Cloud Chief, later moving near the present site of Clinton and to Port and Retrop, moving to Dill City in 1930. Doctor Jones received an O.S.M.A. 50 year Pin in 1949.

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APRIL Complete Annual Meeting Program

MAY Fiftieth Anniversary Issue

Radio-Active Cobalt Room Built By State Physicians

Doctors John R. Danstrom, David C. Lowry and Haven W. Mankin, all of Oklahoma City, announce the installation of the first Cobalt 60 teletherapy in the state of Oklahoma for the treatment of cancer. This installation has been made at their office at 528 N. W. 12, Oklahoma City, where a special room has been built to house the radio-active cobalt. This special room has walls which vary in thickness from 36 to 18 inches of solid concrete.

Cobalt therapy is primarily used for the treatment of deep seated cancer, such as those in the pelvis, bladder, prostrate, lung and esophagus. However, it will be used to treat most all malignancies except skin cancer.

Cobalt therapy offers the following advantages over conventional deep x-ray therapy in that is gives less skin reaction, gives a better depth dosage to the tumor, and causes less constitutional reaction.

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